


PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference PALLBA266		FOR FURTHER ACTION		See Form PCT/IPEA/416
International application No. PCT/EP2005/001056		International filing date (day/month/year) 01.02.2005	Priority date (day/month/year) 02.02.2004	
International Patent Classification (IPC) or national classification and IPC INV. B32B5/18 E04C2/00 A63C5/00 B60R21/00				
Applicant L&L PRODUCTS, INC. et al.				
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 9 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input type="checkbox"/> sent to the applicant and to the International Bureau) a total of sheets, as follows:</p> <p><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in electronic form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>				
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the report</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input checked="" type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input checked="" type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>				
Date of submission of the demand 11.08.2005		Date of completion of this report 10.04.2006		
Name and mailing address of the international preliminary examining authority:  European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016		Authorized officer Stinchcombe, J Telephone No. +31 70 340-		



**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/EP2005/001056

Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language, which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

Description, Pages

1-16 as originally filed

Claims, Numbers

1-31 as originally filed

Drawings, Sheets

1/6-6/6 as originally filed

- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing
3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (*specify*):
 - ☐ any table(s) related to sequence listing (*specify*):
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (*specify*):
 - ☐ any table(s) related to sequence listing (*specify*):

* If item 4 applies, some or all of these sheets may be marked "superseded."

Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been examined in respect of:

☐ the entire international application,

☒ claims Nos. 22-31

because:

☐ the said international application, or the said claims Nos. relate to the following subject matter which does not require an international preliminary examination (specify):

☐ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. are so unclear that no meaningful opinion could be formed (*specify*):

☐ the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed.

☒ no international search report has been established for the said claims Nos. 22-31

☐ the nucleotide and/or amino acid sequence listing does not comply with the standard provided for in Annex C of the Administrative Instructions in that:

the written form

☐ has not been furnished

☐ does not comply with the standard

the computer readable form

☐ has not been furnished

☐ does not comply with the standard

☐ the tables related to the nucleotide and/or amino acid sequence listing, if in computer readable form only, do not comply with the technical requirements provided for in Annex C-bis of the Administrative Instructions.

☒ See separate sheet for further details

Box No. IV Lack of unity of invention

1. ☒ In response to the invitation to restrict or pay additional fees, the applicant has:
- ☐ restricted the claims.
 - ☒ paid additional fees.
 - ☐ paid additional fees under protest.
 - ☐ neither restricted nor paid additional fees.
2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.
3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is
- ☐ complied with.
 - ☐ not complied with for the following reasons:
4. Consequently, this report has been established in respect of the following parts of the international application:
- ☐ all parts.
 - ☒ the parts relating to claims Nos. 1-21 (in full) .

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	12-14,19,20
	No: Claims	1-11,15-18,21
Inventive step (IS)	Yes: Claims	
	No: Claims	1-21
Industrial applicability (IA)	Yes: Claims	1-21
	No: Claims	

2. Citations and explanations (Rule 70.7):

see separate sheet

Re Item III.

No opinion under item V is provided for the subject-matter corresponding to (groups of) invention(s) numbered 3 & 4 (see item IV), since no search has been carried out for these (groups of) invention(s).

Re Item IV.

The separate inventions/groups of inventions are:

Invention 1

1-3 (in full), 5-21 (in part)

Composite comprising sandwich structure comprising at least two surface layers attached to a central layer of rigid epoxy foam with thickness at least 1.5 times the combined thickness of the surface layers and the foam of density 0.2-1.5 g/cm³. Use thereof in construction, transport or sporting goods.

Invention 2

4 (in full), 5-21 (in part)

Composite comprising at least two surface layers of thickness 0.2-10 mm and a core layer of rigid epoxy foam with thickness 2-200 mm. Use thereof in construction, transport or sporting goods.

Invention 3

22 (in full), 24-31 (in part)

Process in accordance with claim 22.

Invention 4

23 (in full), 24-31 (in part)

Process in accordance with claim 23.

The single general concept which links together the groups of inventions identified is that structural materials can be formed by providing laminates comprising a rigid epoxy core layer sandwiched between surface layers. However, this single general concept is already known from documents FR2356509 (see p 1 line 23 to p 2 line 33) and US3941725 (example 26). Therefore there is no single general inventive concept linking

together the separate groups of inventions within the meaning of Rule 13.1 PCT, and the application lacks unity of invention. Furthermore, there is no technical relationship between the various invention groups due to same or corresponding technical features within the meaning of Rule 13.2 PCT.

The process claims 22 and 23 are not limited only to the products of product claims 1 and 4, and hence they each form a distinct group of inventions.

Re Item V.

- 1 Reference is made to the following documents:

D1 : FR 2 356 509 A (PHILIPS GLOEILAMPENFABRIEKEN NV) 27 January 1978 (1978-01-27)
D2 : US 3 941 725 A (SCHMITTER ET AL) 2 March 1976 (1976-03-02)
D3 : US 4 065 150 A (VAN AUKEN ET AL) 27 December 1977 (1977-12-27)
D4 : US 5 030 488 A (SOBOLEV ET AL) 9 July 1991 (1991-07-09)
D5 : EP 0 047 229 A (CIBA-GEIGY AG) 10 March 1982 (1982-03-10)
D8 : US-A-5 849 407 (SEIBERT ET AL) 15 December 1998 (1998-12-15)

Invention 1

2 INDEPENDENT CLAIM 1

- 2.1 The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 1 is not new in the sense of Article 33(2) PCT. Document D1 discloses (the references in parentheses applying to this document) a composite comprising a sandwich structure (p 1 lines 22-28) comprising two surface layers of paper or fibreglass (p 2 lines 11-19) attached to a central layer of rigid epoxy foam (p 2 lines 3-6), wherein the the composite has a thickness of 1-3 mm of which the facing layers comprise 0.2-0.4 mm (p 2 lines 30-33) and wherein the density of the foam is 0.5-0.8 g/cm³ (p 2 lines 6-8).
- 2.2 The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 1 is not new in the sense of Article 33(2) PCT. Document D2 discloses (the references in parentheses applying to this document) a composite comprising a sandwich structure comprising two surface layers of aluminium sheet attached to a central layer of rigid epoxy foam of density

0.38 g/cm³ (example 26).

3 INDEPENDENT CLAIM 18

- 3.1 The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 18 is not new in the sense of Article 33(2) PCT. Document D1 discloses (the references in parentheses applying to this document) the composite of 2.1 (see above) used for constructional purposes (p 1 lines 1-3, lines 22-28).

4 INDEPENDENT CLAIM 21

- 4.1 The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 21 is not new in the sense of Article 33(2) PCT. Document D2 discloses (the references in parentheses applying to this document) the composite of 2.2 (see above) used for sports goods (skis; example 26).

Invention 2

5 INDEPENDENT CLAIM 1

- 5.1 The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 1 is not new in the sense of Article 33(2) PCT. Document D3 discloses (the references in parentheses applying to this document) a composite comprising two fibrous surface layers attached to a central layer of rigid epoxy foam (col 2 lines 33 to col 3 line 2), wherein the surface layers have a thickness of 0.25-0.5 mm and the core layer has a thickness of 1.5-2.3 mm (col 3 lines 34-40).
- 5.2 The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 1 is not new in the sense of Article 33(2) PCT. Document D4 discloses (the references in parentheses applying to this document) a composite comprising two metal surface layers attached to a central layer of rigid epoxy foam (Example II, Table II), wherein the surface layers have a thickness of 0.46 or 1.27 mm and the core layer has a thickness of approx. 6 mm.
- 5.3 The present application does not meet the criteria of Article 33(1) PCT, because

the subject-matter of claim 1 is not new in the sense of Article 33(2) PCT.

Document D5 discloses (the references in parentheses applying to this document) a composite comprising two fibre-reinforced plastic layers attached to an inner layer of rigid epoxy foam (p 3 paras 2-4), wherein the surface layers have thicknesses of 1 & 2 mm and the core layer has a thickness of 5 mm (Example 4).

- 5.4 The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 1 is not new in the sense of Article 33(2) PCT.

Document D2 discloses (the references in parentheses applying to this document) a composite of thickness 200 mm comprising two aluminium sheet surface layers attached to a central layer of rigid epoxy foam (example 26). While D2 does not explicitly reveal aluminium sheet thicknesses falling in the range 0.2-10 mm, document D8 discloses typical aluminium sheets used in laminates with foam cores having thicknesses of 0.5 mm (see D8 col 2 lines 52-67).

6 INDEPENDENT CLAIM 18

- 6.1 The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 18 is not new in the sense of Article 33(2) PCT.

Document D4 discloses (the references in parentheses applying to this document) the composite of 5.2 (see above) used for constructional and transport purposes (col 1 lines 5-20).

- 6.2 The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 18 is not new in the sense of Article 33(2) PCT.

Document D5 discloses (the references in parentheses applying to this document) the composite of 5.3 (see above) used for transport purposes (p 5 para 3).

7 INDEPENDENT CLAIM 21

- 7.1 The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 21 is not new in the sense of Article 33(2) PCT.

Document D3 discloses (the references in parentheses applying to this document) the composite of 5.1 (see above) used for sports goods (skis; col 2 lines 20-32).

General

8 DEPENDENT CLAIMS 2, 3, 5-17, 19 & 20

Dependent claims 2, 3, 5-17, 19 & 20 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty and/or inventive step (Article 33(2) and (3) PCT).